

IMPACT OF TEXTILE WET PROCESSES ON THE HEALTH OF THE WORKERS

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ABSTRACT

The textile industry is the largest industry in the country. It meets the needs of the increasing population for one of the basic necessities of life i.e. clothing. It offers the immense scope for employment. The textile industry has its importance in the national economy, but at the same time, it is responsible for disastrous environmental and health impacts. Textile wet processing like desizing, scouring, bleaching, mercerizing, dyeing and printing causes severe pollution and health problems to the workers.

KEYWORDS: Health, Processes, Textile & Workers

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INTRODUCTION

The manufacture and processing of textiles utilises many different chemical reagents, such as acids, bases, water softeners, salts, organic solvents, dyes and a range of finishes. A significant number of these are harmful to the environment, to the people working in textile processing and potentially to the consumers. Workers in the textile industry are exposed to a number of chemicals, especially those engaged in the activities of dyeing, printing and finishing. The most widely used chemicals are surfactants and auxiliaries, which may act as irritants. Acidic detergents can cause eczema and contact dermatitis. Enzymes, bleaches and brighteners can evoke respiratory allergic reactions. Aromatic and chlorine containing organic solvents are known irritants. Other auxiliaries, including strong acids, mineral oils and salts can cause irritation and allergic reactions (Klemola, 2008). Industrial workers face a variety of problems with regard to respiratory, skin, eye, ear along with the problem of general weakness, pain in back, loss of appetite etc. Thus, in the present study, an attempt was made to study the health problems of the workers if any, in the textile processing units

METHODOLOGY

To study impact of textile processes on the health of workers, an attempt was made to gather data on this aspect. This covered their health problems while working that included Respiratory, Skin, Eye, Ear or any other occupational hazard. A total of 345 workers had been selected from textile wet processing units involved in desizing, singeing scouring, bleaching, mercerizing, dyeing, printing and finishing.

RESULTS AND DISCUSSIONS

Respiratory

The presence of respiratory irritants in the workplace can be unpleasant and distracting, leading to poor morale and decreased productivity. Certain exposures are dangerous, even lethal. In either extreme, the problem of respiratory irritants and inhaled toxic chemicals is common, many workers face a daily threat of exposure. These compounds cause harm by a variety of different mechanisms, and the extent of injury can vary widely, depending

on the degree of exposure and on the biochemical properties of the inhalant (Klemola, 2008).

In the present study, the respiratory related problems faced by the workers of the processing units, included were cough, dry/sore throat, chest pain, coughing blood, wheezing, running nose and frequent cold. The analysis indicated that **cough problem** was found more in workers of categories involved Desizing, Scouring, Bleaching Mercerising, Dyeing and Singeing. It may be due to inhalation of fumes, chemicals, and solvents during processing of fabrics. Inhalation of Vapour of acid, and chemicals during desizing, scouring, bleaching and mercersing may affect respiratory system. **Dry/sore throat** was found more in workers working in finishing and singeing processes. As finishing and singeing processes create a lot of heat and makes the working environment extremely hot which may cause dryness in throat due to excessive sweating and inhalation of fumes. Other respiratory problems like running nose, coughing blood, frequent cold, chest pain and wheezing were found very negligible among workers.. As Chlorine gas released during bleaching, causes severe irritation of respiratory tract (Strother et al., 1998). There are evidences that some reactive dyes cause occupational asthma or other allergic reactions in workers (Christie, 2007). The finding of the present investigation was found in conformity to previous researches.

Skin

The dyeing procedure directly exposes workers to various dyes and chemicals used for bleaching, printing and finishing. Skin diseases, such as allergic contact dermatitis, irritant dermatitis and inflammation of mucous membranes, result from contact with dyes and chemicals, particularly acids, alkalis, oxidising and reducing agents, detergents and solvents. Dyes containing anthraquinone or azo structures are known to cause contact dermatitis (Klemola, 2008). The skin related problems faced by the workers of the processing units, were covered under itching, rashes, skin redness and infection. The data indicated that itching, rashes, skin redness and infection problem were found more among the workers of Desizing, Scouring, Bleaching, Mercerising and Dyeing due to contact with dyes and chemicals. During interview, majority of workers reported that use of caustic soda while processing of textile causes skin irritation. It was reported that the use of hypochlorite solution for bleaching, which releases chlorine, which is a skin irritant. Many dyestuffs used during processing of fabrics are skin irritants (Strother et al., 1998).

Eye/Ear

Eyes / ears problems faced by the workers of the processing units, were covered under itching, watering, redness, pain, swelling, vision change, ear-hearing or ringing. It was observed from the results that an eye itching, watering problem, eye redness were common among workers involved in Desizing, Scouring, Bleaching, Mercerizing, Dyeing, printing and Finishing. As processing of fabrics are using various chemicals, which are eye irritant. Processes create a lot of heat and make the working environment extremely hot, which may cause eye irritation, redness and watering. Formaldehyde used during finishing could cause eye irritation. The free caustic dusts, mists and sprays may cause irritation of the eyes. Other problems like pain, swelling, vision change, ear hearing and ringing were found to be negligible among workers. Smith et al., (1994) reported that formaldehyde used during finishing could cause eye irritation. The free caustic dusts, mists and sprays may cause irritation of the eyes (ILO, 1984).

Other Problems

They were studied among the workers of textile processing units like headache, stomachache, loss of appetite, nausea, weakness, irritability, backache, pain of the body, swelling arm and nervousness. Data indicated that problems

related to central nervous system like headache, irritation, feeling of nausea, nervous attributed due to inhalation of chemicals solvents, dyes and excessive heat and also owing to improper ventilation and unhygienic conditions in the units. The air in the mills was not circulated causing it to become very hot in the summer and extremely cold in the winter may cause headache. Physical problems comprised of pain in elbow and lower limb, stiffness, due to the activities performed. Statistics further inferred that problems like headache and feeling of nausea attributed due to lack of oxygen interference caused by the inhalation of volatile solvents, due to the chemicals and dyes and also owing to improper ventilation in the unit premises resulting in excess heat. Problems related to gastro intestinal problems like stomachache and loss of appetite may be due to improper eating habits. Problems related to ergonomics like weakness, swelling in arms/legs, backache, pain in body attributed to long working hours and stressful work. Also, workers reported that they had to do night shifts, which may lead to stress, weakness, pain in body and other physical problems.

CONCLUSIONS

The above results highlighted the fact that detrimental work practices in the textile processing units resulted in various types of physical, chemical, ergonomic and biological hazards. The major problems faced by the workers related to skin were itching, rashes, skin infection owing to the exposure of chemicals. Ergonomic problems comprised of pain, stiffness in hand and pain in elbow due to the activity performed and lower limb. Results also revealed that workers suffered from many other problems such as headache, feeling of nausea and difficulty in breathing.

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